REMARKS

Status of Claims:

Claims 1-21 are present for examination.

Request for Interview:

Applicant requests an interview with the Examiner to discuss the claim amendments and remarks that are set forth in the present reply. After reviewing the following remarks, the Examiner is invited to contact David Blumenthal, Attorney for Applicant, at telephone number (310) 975-7895, to schedule an interview for the present case.

Interview Summary:

Applicant expresses appreciation to the Examiner for the courtesy of the interview on February 28, 2006. The following individuals participated in the interview: (i) Examiner Lin; (ii) David Blumenthal, attorney for applicant; and (iii) Justin Sobaje, attorney for applicant.

During the interview, we talked about support for "a single socket connection" in the specification as filed. In particular, we pointed to FIG. 1 and page 4, line 30 to page 5, line 1 of the present specification. The Examiner listened to the comments, and the conversation was ended as it was near the end of the work day. No exhibits were shown and no demonstrations were conducted during the interview. No other pertinent matters were discussed.

Claim Rejections:

Claims 1-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rangarajan et al. (U.S. Patent No. 6,510,439) (hereinafter Rangarajan) in view of Cianfrocca et al. (U.S. Patent No. 6,088,796) (hereinafter Cianfrocca).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rangarajan in view of Cianfrocca, and further in view of Reisman (U.S. Patent No. 6,611,862).

With respect to claims 1-21, as amended, the rejections are respectfully traversed.

Independent claim 1, as amended, recites a method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction, comprising:

> "communicating an HTTP request from the client to the web server over a socket connection as part of the single HTTP transaction, wherein the HTTP request is configured to initialize a CGI that operates within or in conjunction with the web server; and
>
> executing operations associated with the CGI, wherein the operations are configured to perform the **two-way asynchronous** communication with the client **over the socket connection** and **within the single HTTP transaction** until terminated by the client or the CGI." (Emphasis Added).

A method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction including the above-quoted features has at least the advantages that: (i) an HTTP request is communicated from the client to the web server over a socket connection as part of the single HTTP transaction; (ii) the HTTP request is configured to initialize a CGI that operates within or in conjunction with the web server; (iii) operations associated with the CGI are executed; and (iv) the operations are configured to perform the **two-way asynchronous** communication with the client **over the socket connection** and **within the single HTTP transaction** until terminated by the client or the CGI. (Specification; page 3, lines 1-9; page 3, lines 12-22; page 6, line 19 to page 7, line 11; page 7, lines 18-24; page 8, lines 3-11; page 8, line 27 to page 9, line 7; abstract; FIGs. 2, 3, and 4).

A significant feature of embodiments of the present invention is the ability to maintain two-way asynchronous communication between a client and a web server within a single HTTP transaction. (Specification; page 3, lines 12-15; page 7, lines 18-19). For example, with reference to FIGs. 2 and 4 of the present application, an HTTP request that is part of a single HTTP transaction may be communicated from a client to a web server over a socket connection. (FIG. 2; references 210 and 215). The HTTP request may initialize a CGI that executes operations to perform two-way asynchronous communication with the client over the socket

connection and within the single HTTP transaction. (FIG. 2; references 220 and 225). The CGI is able to send information to the client over the socket connection and within the single HTTP transaction (FIG. 2; references 232 and 242), and the client is able to send information to the CGI over the socket connection and within the single HTTP transaction (FIG. 4; references 430 and 435). Once the CGI has been initialized, the operations executed by the CGI for performing two-way asynchronous communication allow for the sending of information from the CGI to the client to occur totally independently of the sending of information from the client to the CGI. (FIGs. 2 and 4; references 232, 242, 430, and 435). Indeed, once the CGI has been initialized, both the CGI and the client are able to send information whenever they want to send information, however many times they want to send information, and they are able to receive any information sent from the other side. (FIGs. 2 and 4; references 230, 235, 240, 232, 242, 430, 435, 432, and 437).

Neither Rangarajan nor Cianfrocca, alone or in combination, disclose or suggest a method including the above-quoted features.

In reviewing the cited references, it is important to first attempt to identify a client and a web server. Then, it is important to attempt to identify a socket connection between the client and the web server over which an HTTP request is communicated to initialize a CGI as part of a single HTTP transaction. Finally, once the client, the web server, and the socket connection are purportedly identified, it is important to determine whether or not the CGI executes operations to perform **two-way asynchronous** communication with the client **over the socket connection** and **within the single HTTP transaction**.

The Examiner points to Rangarajan, column 2, lines 61-64, as disclosing, "communicating an HTTP request from the client to the web server, wherein the HTTP request is configured to initialize a CGI". (Office Action; page 3). The client request indicated in column 2, lines 61-64 of Rangarajan corresponds to a client request from client 24 to HTTP server 16 in FIG. 1 of Rangarajan. (Rangarajan; FIG. 1; column 2, lines 61-64; column 6, lines 55-58). Thus, the Examiner is treating the **client 24** of the system of Rangarajan as the **client** of the present

claim and is treating the **HTTP server 16** of the system of Rangarajan as the **web server** of the present claim. (Rangarajan; FIG. 1). As a consequence, the relevant socket connection to examine would be a connection between the client 24 and the HTTP server 16 in the system of Rangarajan.

The CGI script 18 in the system of Rangarajan does not execute operations to perform **two-way asynchronous** communication with the client 24 **over the socket connection** between the client 24 and the HTTP server 16. (Rangarajan; FIG. 1). Instead, the client 24 merely sends a client **request** and an accompanying cookie to the HTTP server 16 over the socket connection between the client 24 and the HTTP server 16, and then the HTTP server 16 merely sends back **a reply to the request** with an accompanying cookie to the client 24 over the connection between the client 24 and the HTTP server 16. (Rangarajan; FIG. 1; column 2, lines 64-66; column 3, lines 30-33; column 4, lines 40-42; column 6, lines 8-11 and 55-58; column 7, lines 42-44). Such request-reply communication between the client 24 and the HTTP server 16 in the system of Rangarajan is by definition only synchronous communication, and is not **two-way asynchronous** communication as described above with reference to applicants' figures 2 and 4.

The Examiner points to Rangarajan (column 2, lines 3-6; column 6, lines 55-67; and column 7, lines 10-13) as disclosing that, "CGI script is configured to establish an Internet socket (two-way asynchronous communication) connection with SMS". (Office Action; page 3). The CGI script referred to by the Examiner corresponds to the CGI script 18 in FIG. 1 of Rangarajan, and the SMS referred to by the Examiner corresponds to the State Management Server 12 in FIG. 1 of Rangarajan. (Rangarajan; FIG. 1; column 7, lines 5-13) (Advisory Action; page 2). Thus, the Internet socket identified by the Examiner is between the CGI script 18 and the SMS 12 in the system of Rangarajan, and not between the client 24 and the HTTP server 16.

In considering the Internet socket identified by the Examiner between the **CGI script 18** and the **SMS 12** in the system of Rangarajan, it is first important to note that the Internet socket is separate and distinct from the socket connection between the **client 24** and the **HTTP server**

16. (Rangarajan; FIG. 1; column 3, lines 12-16; column 7, lines 10-15). As a consequence, the Internet socket identified by the Examiner between the CGI script 18 and the SMS 12 in the system of Rangarajan cannot be considered as being a socket connection of the present claim, because a socket connection of the present claim is a socket connection over which an HTTP request to initialize a CGI is communicated from a client to a web server, and which allows for two-way asynchronous communication between the client and the CGI. The Internet socket identified by the Examiner in the system of Rangarajan is not even between the client 24 and the HTTP server 16. (Rangarajan; FIG. 1; column 3, lines 12-16; column 7, lines 10-15).

Moreover, even when looking at the Internet socket between the CGI script 18 and the SMS 12 in Rangarajan, it is important to note that the CGI script 18 does not even execute operations to perform two-way asynchronous communication with the SMS 12 over the Internet socket. Instead, the CGI script 18 merely forwards a URL and any received cookies to the SMS 12 over the Internet socket, and then, **in response**, the SMS 12 merely returns a path identifying a location of a document along with a modified cookie. (Rangarajan; column 3, lines 12-26; column 7, lines 10-42). Thus, the communication between the CGI script 18 and the SMS 12 is only synchronous, because the CGI script 18 merely sends a request to the SMS 12 and the SMS 12 merely responds to the request. (Rangarajan; column 3, lines 16-21).

In the Advisory Action, the Examiner notes that Rangarajan discloses that a prior art technique for providing coherency between files in a group that are retrieved from a server is, "restrictive in practice", and that, "it would be advantageous to provide a system and method for consistent update and retrieval of documents from an Internet server". (Rangarajan; column 2, lines 15-34) (Advisory Action; page 2). The Examiner then attempts to conclude that, "[t]his leads Rangarajan's disclosure in col. 7, l.5-12 to establish an Internet socket, which sending and receiving can be occurred simultaneously, therefore it is a two-way asynchronous communication between client and server using HTTP." (Advisory Action; page 2). However, contrary to the Examiner's assertion, Rangarajan did not solve the problem of consistent update and retrieval of documents by providing for **two-way asynchronous** communication between a client and a

server, but rather uses **cookies** to maintain state information, where the **cookies** are sent along with requests to obtain replies through **synchronous** communication. (Rangarajan; abstract; FIG. 5; column 1, lines 21-38; column 3, lines 2-8; column 6, lines 8-50; column 7, lines 30-42; column 11, lines 18-35). The **cookies** provide state information about previously accessed documents from previous requests. (Rangarajan; column 3, lines 2-8).

Cianfrocca does not cure the deficiencies with respect to the teaching of Rangarajan discussed above. The Examiner recognized that, "Applicant argues that the system of Cianfrocca only allows for establishing a synchronous socket connection between a message system and a client in response to an HTTP request." (Advisory Action; page 2). The Examiner then states that, "Cianfrocca discloses the asynchronous message-oriented middleware product supports HTTP, HTTPS, and SMTP". (Advisory Action; page 2) (Cianfrocca; column 3, lines 66-67; column 4, lines 1-2). The Examiner further states that, "Cianfrocca further discloses in col. 2, l.46-50, that the invention is to provide an improved asynchronous message-oriented middle product that also operated as an HTTP server and provides full-duplex socket connection." (Advisory Action; page 2).

However, while the messenger system in the system of Cianfrocca may support multiple protocols, such as HTTP, HTTPS, SMTP, and a native messenger system protocol (TMSP), **only** the native messenger system protocol in the system of Cianfrocca allows for full-duplex connections. (Cianfrocca; FIGs. 2 and 3; column 3, line 66 to column 4, line 47). Indeed, Cianfrocca states that the messenger system, "can identify the protocol used for a connection and treat it appropriately." (Cianfrocca; column 4, lines 7-10; column 12, lines 4-14; column 14, lines 54-62) (Emphasis Added). A web browser connects to the messenger system in the system of Cianfrocca using HTTP in the same way it would connect to an **ordinary** HTTP server. (Cianfrocca; column 4, lines 12-14). As a consequence, the HTTP connections in the system of Cianfrocca are only synchronous connections. Cianfrocca even states that, "[t]he nature of a HTTP request is that there is request for connection which is made to respond to a single query."

(Cianfrocca; column 8, lines 48-50). It is important to understand the following paragraph in Cianfrocca:

> "Different types of programs connect to the messenger system in different ways. A web browser connects to the messenger system using HTTP in the **same way** it would connect to an **ordinary HTTP server**. In the case of HTTP 1.0, the messenger system knows to close the socket connection once information is sent back to the web browser. In addition to a web server, the messenger system can interface with a mail server, directory server, security server and proxy server." (Cianfrocca; column 4, lines 11-19) (Emphasis Added).

Thus, the HTTP connections in the system of Cianfrocca are only synchronous. In order to have a full duplex socket in the system of Cianfrocca, it is necessary to use a Connect function of the native messenger system protocol, which is a different protocol than HTTP. (Cianfrocca; column 4, lines 32-42).

In contrast, a method of claim 1 of the present application allows for: (i) communicating an HTTP request from a client to a web server over a socket connection as part of a single HTTP transaction, where the HTTP request is configured to initialize a CGI; and then (ii) executing operations associated with the CGI, where the operations are configured to perform two-way asynchronous communication with the client over the socket connection and **within the single HTTP transaction**. The messenger system of Cianfrocca does not allow for a CGI to execute operations to perform two-way asynchronous communication with a client **within a single HTTP transaction**, because the connections using HTTP in Cianfrocca are only used for synchronous communication. (Cianfrocca; column 4, lines 7-16; column 12, lines 12-14). A web browser may send an HTTP request to the messenger system in Cianfrocca, and then the messenger system returns a response to the request to the web browser, which is only synchronous communication using HTTP. (Cianfrocca; column 4, line 65 to column 5, line 8; column 5, lines 45-51; column 8, lines 11-13 and lines 38-39).

Therefore, independent claim 1, as amended, is neither disclosed nor suggested by the Rangarajan and Cianfrocca references and, hence, is believed to be allowable. The Patent Office has not made out a *prima facie* case of obviousness under 35 U.S.C. 103.

Independent claim 9, as amended, recites a system for maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction with features similar to features of a method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction of independent claim 1. Therefore, independent claim 9 is believed to be allowable for at least the same reasons that independent claim 1 is believed to be allowable.

Independent claim 20, as amended, recites a method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction with features similar to features of a method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction of independent claim 1. Therefore, independent claim 20 is believed to be allowable for at least the same reasons that independent claim 1 is believed to be allowable.

Independent claim 21, as amended, recites a system for maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction with features similar to features of a method of maintaining two-way asynchronous communication between a client and a web server within a single HTTP transaction of independent claim 1. Therefore, independent claim 21 is believed to be allowable for at least the same reasons that independent claim 1 is believed to be allowable.

The dependent claims are deemed allowable for at least the same reasons indicated above with regard to the independent claims from which they depend. It is noted that, with respect to dependent claim 18, Reisman does not cure the deficiencies with regard to the teachings of Rangarajan and Cianfrocca discussed above.

Conclusion:

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone to schedule a telephone interview to advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 4-26-06

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